

App. Serial No. 10/539,102
Docket No.: NL031069US

In the Claims:

Please amend claims 1, 5 and 7 as indicated below. This listing of claims replaces all prior versions.

1. (Currently amended) An electric device with a body having:

a resistor comprising a phase change material being changeable between a first phase and a second phase, the resistor having a first electrical resistance when the phase change material is in the first phase and a second electrical resistance, different from the first electrical resistance, when the phase change material is in the second phase, and

a heating element being able to conduct a current for enabling a transition of the phase change material from the first phase to the second phase by heating the phase change material, the heating element being arranged in parallel with the resistor.

2. (Previously presented) An electric device as claimed in claim 1, wherein the heating element has a heating element electrical resistance which is smaller than the maximum of the first electrical resistance and the second electrical resistance.

3. (Previously presented) An electric device as claimed in claim 2, wherein the heating element's electrical resistance is larger than 0.3 times the minimum of the first electrical resistance and the second electrical resistance.

4. (Previously presented) An electric device as claimed in claim 1, wherein the heating element and the resistor are in direct contact.

5. (Currently amended) An electric device as claimed in claim 1, wherein the phase change material constitutes a conductive path between a first contact area and a second contact area, a cross-section of the conductive path having an area that is being smaller than the first contact area and the second contact area.

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6. (Previously presented) An electric device as claimed in Claim 5, wherein a part of the conductive path having said cross-section constitutes a volume of phase change material, the volume having an electrical resistance which is smaller than an electrical contact resistance at the first contact area and/or at the second contact area, independent of whether the phase change material is in the first phase or the second phase.

7. (Currently amended) An electric device as claimed in Claim 1, wherein the heating element material is of a composition $X_{100-(t+s)}Si_sY_t$, where t and s denote atomic percentages satisfying $t < 70$ and $s + t > 30$, X comprises one or more elements selected from Ti and Ta, and Y comprises one or more elements selected from C and N.

8. (Previously presented) An electric device as claimed in Claim 7, wherein X is substantially free from Ti.

9. (Previously presented) An electric device as claimed in Claim 7, wherein s is smaller than or equal to 0.7.

10. (Previously presented) An electric device as claimed in Claim 7, wherein Y comprises N.

11. (Previously presented) An electric device as claimed in Claim 1, wherein the resistor constitutes a memory element, and the body comprises:

an array of memory cells, each memory cell comprising a respective memory element and a respective selection device, and

a grid of selection lines,

each memory cell being individually accessible via the respective selection lines connected to the respective selection device.

12. (Previously presented) An electric device as claimed in Claim 11, wherein:

the selection device comprises a metal oxide semiconductor field effect transistor having a source region, a drain region and a gate region, and

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the grid of selection lines comprises N first selection lines, M second selection lines, and an output line, the resistor of each memory element electrically connecting a first region selected from the source region and the drain region of the corresponding metal oxide semiconductor field effect transistor to the output line, a second region of the corresponding metal oxide semiconductor field effect transistor selected from the source region and the drain region and being free from contact with the first region, being electrically connected to one of the N first selection lines, the gate region being electrically connected to one of the M second selection lines.